

Proposed Specifications For Digital Photocopiers

August 1998

Background

EPA is committed to ensuring that the ENERGY STAR[®] label continues to send the simple message that ENERGY STAR-compliant products are the most energy-efficient products available. Therefore, the ENERGY STAR Program seeks to support efforts that will keep the office equipment program current with market trends and advanced technologies. The purpose of the proposed specifications for digital copiers is to keep the ENERGY STAR Copier Program on track with future technological advances.

With this purpose in mind, EPA's goal is to increase the energy-efficiency of the next generation of ENERGY STAR photocopy equipment, particularly in the digital market segment. To achieve this goal, EPA seeks the cooperation of the ENERGY STAR Partners to develop future ENERGY STAR photocopiers that are highly energy-efficient.

Through the outreach efforts of the ENERGY STAR Office Equipment Program, EPA plans to promote this collaborative effort as an example of how voluntary programs can successfully bring new energy-efficient products to market — products that are not only energy-efficient and beneficial to the environment, but products that are easy to use, dependable, and capable of meeting the performance expectations of end users.

The International Energy Agency–Demand Side Management Annex 3 (IEA–DSM Annex 3) is also keenly interested in very energy-efficient digital photocopiers. In fact, IEA will present an award to the first manufacturer(s) that produce(s) a digital photocopier that meets a number of other characteristics in addition to the proposed ENERGY STAR specifications.¹

EPA believes that the specifications proposed in this draft document will establish the future level of energy-efficiency for the ENERGY STAR Office Equipment copier program. EPA understands that the ENERGY STAR Partners can provide important feedback and insight into these specifications. EPA would like to meet with the ENERGY STAR Partners to discuss these specifications for digital photocopiers on either Wednesday, September 2, or Thursday, September 10 in Washington D.C. Those manufacturers unable to attend in person are welcome to participate via conference call. For details regarding the meeting time and location, please contact Andrew Fanara directly at (202) 564-9019.

Proposed Draft Language

EPA plans to incorporate the following draft language into the Copier MOU Version 2.0. It will allow Partners, as appropriate, to qualify specific copier models for the ENERGY STAR label that

¹ Information regarding the IEA–DSM Annex 3 competition, specifications, and award process can be downloaded from the following ENERGY STAR website address: <http://www.epa.gov/appdstar/esoe/techpro.html>. Awards will be presented to manufacturers introducing products that meet the proposed specifications in the medium-speed segment by September, 2000.

meet the proposed specifications. EPA plans to issue Version 2.0 of the Copier MOU to become effective on January 1, 1999. EPA intends to incorporate into Version 2.0 the following draft text and specifications as well as the changes covered in the total energy consumption language, and the Copier MOU Amendments #1 and #2. Although EPA expects the Copier MOU Version 2.0 to become effective on January 1, 1999, EPA expects that the effective date for copier models that meet the proposed Tier 3 specifications listed below will be no earlier than July 1, 2000. (EPA seeks the comments of the manufacturers regarding the appropriateness of this latter effective date.)

Definitions: Proposed language to be added to Section II of the MOU

I. Section II.F of the MOU shall be deleted and replaced with the text below.

F. Sleep Mode: The lowest power state that the copier enters without actually turning off the copier. In this mode both hard copy output and acceptance of information may be delayed. The product shall be able to accept information from the network or other input sources. The product enters a sleep mode within a specified period of time after the last hard copy output was made or after it has entered the energy-saver mode. For copiers that meet the sleep mode requirements in any other mode, no further power reduction is required in order to be compliant.

II. Section II.G of the MOU shall be deleted and replaced with the text below.

G. Energy-Saver Mode: The condition that exists when the copier is not making copies and is consuming less power than when the copier is in the standby mode. When the copier is in the energy-saver mode, there may be some minor delay before the copier will be capable of making the next hard copy output. The copier enters this mode after the elapsed default time as defined in Tables 2, 3, 4, and A.

EPA Note: EPA's objective for digital copiers is to simplify the number of modes by which the copier must enter in order to achieve the lowest level of energy consumption. Although manufacturers may have alternative modes, the power consumption in the Energy-Saver mode is intended to achieve an extremely low level of energy consumption within a short period of inactivity (while permitting the copier to recover within a very short time period).

III. Section II.M of the MOU shall be deleted and replaced with the text below.

M. Recovery Time: The amount of time required for the copier to reach the standby mode starting from the sleep mode. In the case of digital copiers, the recovery time is the time required for the copier to reach its *ready to copy* state starting from the energy-saver mode. (See Table A)

EPA Note: EPA's objective is to encourage manufacturers to develop digital photocopiers that are extremely energy-efficient and that increase end user

satisfaction with respect to recovery time. EPA realizes that technological challenges exist. Therefore, EPA seeks the Partners' feedback with respect to achieving a very low energy-saver mode that has a very short recovery time.

IV. Section II shall be revised to include the following definitions.

- Ready To Copy State: The condition in which the copier has reached its full fusing temperature and begins creating hard copy output. When the copier is in this mode, there is no delay before the copier begins creating hard copy output.
- Paper Compatibility: Paper compatibility specifications require the copier to function fully in all modes (simplex, duplex) with no reduction in performance. That is, the rate of paper jamming or the need for service should not increase due to using paper with specified characteristics for recycled-content and weight.

Specifications

V. Section IV.D of the MOU shall be revised to include the following Table.

Table A
Tier 3 Proposed Specifications For Digital Photocopiers
(To Become Effective On July 1, 2000)

Copier Speed (images or copies per minute)*	Energy-Saver Mode (Watts)	Energy-Saver Default Time (seconds)	Recovery Time (seconds)	Automatic Duplex Mode	Duplex Speed (as a percent of simplex speed)
$0 < \text{ipm} \leq 29$	≤ 5	≤ 10	≤ 10	Standard	≥ 75
$30 \leq \text{ipm} \leq 60$	≤ 10	≤ 10	≤ 10	Standard	≥ 85
$61 < \text{ipm}^{**}$					

* For all intents and purposes, EPA believes images per minute and copies per minute are synonymous terms. For digital copiers, EPA believes images per minute is a more suitable term. EPA welcomes manufacturer feedback regarding this matter.

** EPA proposes the above specifications based on initial research and some feedback from a few ENERGY STAR Partners. EPA would like to include specifications for the high-speed digital copier segments ($61 < \text{ipm}$) as well. EPA would like to discuss the above specifications, as well as the appropriate specifications in the high-speed digital copier segments, with the ENERGY STAR Partners.

Additional EPA Notes:

1. EPA believes that automatic duplexing is a reasonable specification for ENERGY STAR digital copiers. Automatic duplexing shall be the default setting for digital copiers. The manufacturer's sales personnel or dealers should inform end users of

this feature at installation.

2. The percent of duplex speed specification is intended to avoid end user dissatisfaction. For example, a 30 ipm digital copier should have a duplex speed of ≥ 26 ipm.

Test Conditions and Methods

Test Conditions:

Digital copiers should be tested according to the testing conditions (voltage, frequency) for the intended end market as outlined in Section 1: Testing Conditions of *Testing Conditions For ENERGY STAR[®] Measurement: Copiers* (Copier MOU Testing Guidelines).

EPA Note: EPA would like to discuss, with the Partners, including testing procedures and methods for the following:

- Simplex and duplex speed, and
- Recovery time.

EPA believes that it may benefit the ENERGY STAR Partners if consistent testing procedures and methods were developed. The discussion is intended to determine whether establishing these test procedures and methods is necessary and feasible.